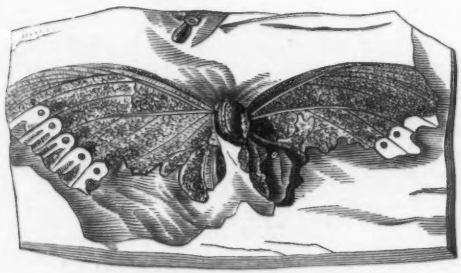
VOL. IX. No. 9.

Entomological News



ARGYNNIS PLUTO.
(Fossil butterfly)

NOVEMBER, 1898.

EDITOR:
HENRY SKINNER, M. D.
PHILIP P. CALVERT, Ph.D., Associate Editor.

ADVISORY COMMITTEE:
EZRA T. CRESSON. CHARLES A. BLAKE. CHARLES LIEBECK.
PHILIP LAURENT. WILLIAM J. FOX. CHARLES W. JOHNSON.

PHILADELPHIA:
ENTOMOLOGICAL ROOMS OF
THE ACADEMY OF NATURAL SCIENCES,
LOGAN SQUARE.
1898.

Entered at the Philadelphia Post Office as Second Class Matter.

Entomological News

published monthly, **excepting July and August**, in charge of the Entomological Section of the Academy of Natural Sciences, Philadelphia, and the American Entomological Society.

Annual subscription $1.00, in advance.
(Outside of the United States and Canada, $1.20)

Advertising Rates: 30 cents per square inch, single insertion; a liberal discount on longer insertions. No advertisement taken for less than 60 cents. Cash in advance.

☞ **All remittances should be addressed to ENTOMOLOGICAL NEWS, Academy of Natural Sciences, 19th and Race Streets, Philadelphia, Pa.**

Patent Electric Collecting Lamp

Gives astonishing results at "Sugaring," etc. No attendant necessary.
Send for circular. Sold only by

S. T. KEMP,
637 Jefferson Ave., Elizabeth, N. J.

Rare Coleoptera.

ABOUT 6000 SPECIES ON SALE.

The undersigned is breaking up his collection of American beetles and invites intending purchasers to apply for lists of any family desired.

H. F. WICKHAM,
IOWA CITY, IOWA.

POPULAR SCIENCE

NEWS Nature, Chemistry, Hygiene, Invention, Electricity, Archæology **HEALTH**

Formerly BOSTON JOURNAL OF CHEMISTRY

ENLARGED AND IMPROVED.

Contains a large number of Short, Easy, Practical, Interesting and Popular, Scientific articles, that can be Appreciated and Enjoyed by any intelligent reader, even though he knew little or nothing of Science.

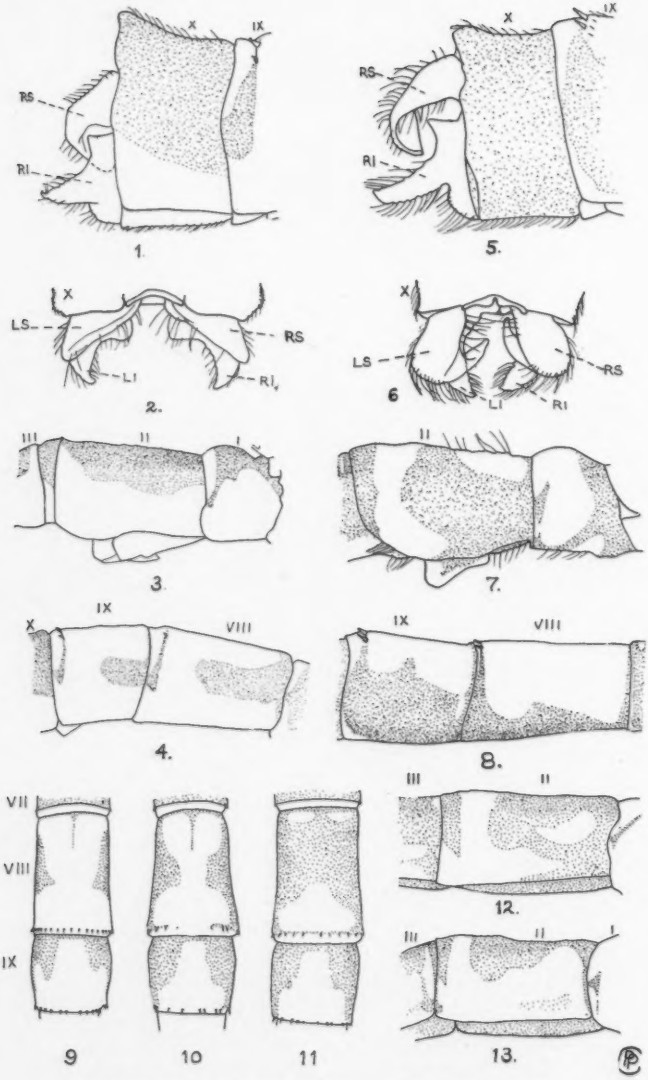
Profusely Illustrated and Free from Technicalities.

Newsdealers, 15 cents. $1.60 per year.

Largest Circulation of any Scientific Paper in the World.

PUBLISHED MONTHLY BY
BENJ. LILLARD, 108 Fulton Street, New York.

☞ **When Writing Please Mention "Entomological News."**



1-4 ISCHNURA VERTICALIS. 5-13 I. KELLICOTTI.

ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. IX. NOVEMBER, 1898. No. 9.

CONTENTS:

Williamson—A new species of Ischnura 209
Calvert—Further notes on the new dragonfly Ischnura Kellicotti..... 211
Dyar—Inguromorpha Slossonii..... 213
Dyar—A new Hypopta..... 214
Schaus—Two new spicies of Hesperocharis..... 215
Cockerell—Another Yellow Perdita.... 215
Harvey—A new Poduran of the genus Gnathocephalus..... 216
Editorial..... 218
Economic Entomology 220
Notes and News..... 224
Entomological Literature..... 226
Doings of Societies..... 229

A NEW SPECIES OF ISCHNURA. (Order Odonata.)

By E. B. WILLIAMSON, Carnegie Museum, Pittsburgh, Pa.

Ischnura kellicotti n. sp. ♂.—Upper part of head and eyes, and antennæ black; postocular spots blue, large, rounded and not connected; genæ blue; frons blue, black above and at the middle; clypeus black above, blue below; labrum blue, black at base; head (except around the occipital foramen) and eyes below pale blue.

Dorsum of prothorax black with the following blue: a transverse line on the anterior lobe; two round spots on the middle lobe; and the posterior margin of the posterior lobe. Propleuron blue. Thorax blue, black as follows: a wide mid-dorsal stripe; a humeral stripe which widens suddenly just posterior to the mesinfraepisternum, which it covers; a very narrow interrupted line on the posterior half of the first lateral suture; a narrow stripe on the second lateral suture, widening anteriorly to cover the metinfraepisternum; a line connecting these stripes posteriorly; under parts dark.

Wings hyaline; antecubitals 2, postcubitals 8; pterostigma: of front wings black ventrally, *blue* dorsally with the inner angle black and the outer angle pale; of hind wings pale brown. Legs black superiorly, blue and pale inferiorly.

Abdomen above metallic or bronze black, with blue as follows: a wide apical ring on 1; a large cordate basal spot and a wide apical ring on 2, the extreme base and apex *of the segment* black; pale narrow inter-

rupted basal rings on 3-7; an apical ring widening into a quadrate median spot on 7; all of 8 excepting a very narrow basal ring; all of 9, the blue narrowed at either side near the middle; two small round basal spots on 10, and the extreme tip of the elevated posterior margin of the segment which is also blue underneath. Sides of 1 and 2 blue and black; of 3-7 and 10 brownish and yellowish with blue tinges; of 8 and 9 black bordered below with blue. Dorsal posterior margin of the tenth segment moderately elevated and produced, the apex scarcely bifid.

Abdominal appendages black, resembling those of *I. verticalis* Say, but slenderer and longer. Superior appendages lamellate, sinuate, about half as long as the tenth segment, rounded triangular in form, the depth at base equal to the sides; the upper, outwardly rolled half scimitar-shaped in profile, and lying above and outside of the upper process of the inferior appendage; the lower, inwardly rolled half lying inside of the upper half of the inferior appendage. Inferior appendages longer than the superior; the lower outer two-thirds produced into a slender process curving downwards, outwards and inwards, the extreme apex turned upwards and inwards and tipped with a small shining tooth; the upper third produced upwards and backwards into a triangular lobe, about one-fifth as long as the lower process.

♀.—Similar to the male. Frons not black at the middle; postocular spots larger. Median lobe of prothorax with an additional small geminate spot in the middle. Thorax the same; wings hyaline; antecubitals 2, postcubitals 9; pterostigma on all the wings pale brown. Abdomen with the blue on 1 and 2 more extensive, on 2 the black is reduced to a triangular spot and narrow basal and apical rings; the apical ring on 7 not widened into a spot; 8 with a basal oblong spot on either side of the median line, and a dome-shaped basal spot, the double apex directed anteriorly; the blue on 9 much narrowed, the black extending across the dorsum basally; 10 narrowly blue. Sides of abdomen darker than in the male; 3 and 4 with a distinct, and 5 with an indistinct blue apical spot; 8 and 9 entirely black.

Valves bluish, the apex and vulvular process light colored, extending beyond the tenth segment. Abdominal appendages pale. The ventral apical spine on the eighth segment is short and acute, less prominent than in *I. verticalis* Say.

Length of abdomen ♂ ♀ 23 mm.; hind wing ♂ 16 mm., ♀ 18 mm.

Round and Shriner Lakes, Whitley County, Indiana: September 2, 1897; June 7, June 24 and July 21, 1898. Named for Professor D. S. Kellicott, who first called attention to this species (footnote † to page 404 in "September Dragonflies of Round and Shriner Lakes, Whitley Co., Indiana," by E. B. Williamson, Indiana Geological Report for 1897).

This species has been taken in New Jersey by Mr. Calvert. He has kindly examined one of my male specimens, and it is by

his advice that I have referred the species to the genus *Ischnura*. I am doubtful about the female, described by the late Professor Kellicott in the footnote mentioned above, being an orange form. In that description the yellow rings on 3–7 are erroneously referred to as apical.

The following variations in the color of males of this species may be noted. The relative amounts of blue and black on frons, clypeus and labrum are variable. The two spots on the median lobe of the prothorax may be absent. The mid-dorsal and humeral stripes may be widened until the included blue is reduced in width to one-third the humeral stripe. The black on the dorsum of 2 may be reduced to a transverse line, or, on the other hand, the cordate spot may be reduced to a geminate spot, and the apical ring be very much narrowed. On 7 the apical spot may be separated from the apical ring. The narrow basal rings on 3–7 are always pale, and frequently yellowish in color. On 10 the two round blue spots may be wanting, may be of unequal size in the same specimen, or there may be four present, the additional ones being placed posteriorly and laterally to the other two. A teneral male was dull yellow and black in coloration, and had the pterostigma of all the wings pale brown.

In the females there is great variation in segments 1 and 2, and 8 and 9; the dorsum of 8 and 9 may be entirely blue, narrowed at the middle on 8, and at the base on 9.

———o———

FURTHER NOTES ON THE NEW DRAGONFLY ISCHNURA KELLICOTTI. (Odonata).

By PHILIP P. CALVERT.

(Supplementary to the preceding paper by Mr. E. B. Williamson.)

On August 28, 1898, at a pond about one mile east of Millville, New Jersey, where the road to Cumberland crosses the small stream known as Petticoat Branch, I observed a small dragonfly flitting a few inches above the water's surface from lily-pad to lily-pad. Its size and color suggested *Enallagma geminatum*, but, wishing to be sure, I captured an individual. Then I saw that I had a male *Ischnura* of a species unknown to me. I at once turned my attention to searching for the other sex, and in less than two hours had obtained six males, four black females and three orange females. So closely did they keep themselves

to the water and floating vegetation, that I was able to catch them only by dropping the net over each individual, sinking it below the water and withdrawing the insect with my fingers while it was still immersed.

On my return to Philadelphia, Mr. Williamson's paper on the Dragonflies of Round and Shriner Lakes was awaiting me. The brief footnote on an "Enallagma sp. (?)", which he has quoted, seemed to apply to my orange *Ischnura* females. As the result of some correspondence to which this idea led, Mr. Williamson kindly consented to my request to send a description of the species, based on material more lately obtained by him, for publication in the NEWS, with the understanding that I should supplement his paper with any additional notes which my New Jersey specimens might suggest. These notes follow:

♂.—The two round blue spots on the median prothoracic lobe are absent in five of the six males. There is no apical blue spot on 7 in one male, while in four others it is represented by a pair of small, isolated spots. There are no basal spots on 10 in five males. One individual, apparently fully colored otherwise, has the pterostigma on *all* the wings pale brown. Abd. 19 mm., hind wing 13–12.5 mm.

Black ♀.—The blue postocular spots are prolonged backwards and downwards on the rear of the head. The two round blue spots on the median prothoracic lobe are very small in one female, while the geminate spot on the same lobe is wanting in two females. There is no apical spot or ring on 7, nor spots on the sides of 3–5. Some variations in the markings of 2 and of 8 and 9 are shown in Pl. XI, figs. 10–13, but a great extent of black on 2 is not correlated with much or little black on 8 and 9, and *vice versa*. Abd. 18.5–19, h. w. 13.5.

Orange ♀.—Like the black female but with orange replacing the blue. No geminate spot on the median prothoracic lobe. Very little dark color on the pectus. The black markings on 2 show the same variations as in the black ♀; on 8 and 9 they are similar but of less extent, especially on 9, although this may perhaps be due to immaturity. Abd. 18.5–20, h. w. 13–14.

♂♀.—Front wings: postnodals 7–8 (♂), 8–9 (♀) nodal sector arising between the third and fourth or near the fourth. Hind wings: 5–7 postnodals, nodal sector arising at the third or a little in front thereof.

From the two previously known Eastern species of *Ischnura*, *verticalis* Say and *Ramburii* Selys, *Kellicotti* differs:

In both sexes by the greater extent of black on the rear of the head, by the wider black stripe on the second lateral thoracic suture, by the extent of the black markings on 8 and 9.

In the male by having the greater part of the upper surface of the pterostigma of the front wing *blue*, and by the shape of the terminal abdominal appendages, especially the hook-like form of the superiors (viewed from above, Pl. XI, fig. 6).

In the orange female by the presence of a black band on the humeral suture (absent in *Ramburii* orange ♀), and the predominance of black on the dorsum of 2 and 3 (orange in *verticalis* orange ♀).

The nearest ally of *Kellicotti* is *verticalis* Say.

EXPLANATION OF PLATE XI.

Figs. 1-4. *Ischnura verticalis* Say, 5-13 *I. Kellicotti* Williamson, n. sp.
Figs. 1, 5. Right side of apex of male abdomens and appendages. x 40.
Figs. 2, 6. Dorsal views of male terminal abdominal appendages. x 40.
Figs. 3, 7. Right side of second abdominal segments, males. x 27.
Figs. 4, 8. Right side of eighth and ninth abdominal segments, males. x 16.
Figs. 9-11. Dorsal views of eighth and ninth abdominal segments, 9 of an orange female, 10 and 11 of black females. x 12.
Figs. 12, 13. Right side of second abdominal segments, black females. x 18.
The stippling shows the position and extent of the black markings. I-X denote abdominal segments. RS right superior, LS left superior, RI right inferior, LI left inferior appendages. All the figures are from camera lucida drawings made from the New Jersey specimens.

INGUROMORPHA SLOSSONII Hy. Edw.

By HARRISON G. DYAR.

Seven years ago an article appeared in this magazine under the above heading, in which this species was referred to the synonymy. No one has questioned the conclusions there set forth; but about a year ago when rearranging the Cossidæ of the National Museum I found both sexes of *Cossula magnifica* Bailey. The sexes are exactly alike as in Dr. Bailey's figures. This at once upset the accepted synonymy; but I was not able, until very recently, to correct the matter fully, as I had no specimen of *slossoniæ* Hy. Edw. One has just been received collected by Mr. H. Schwarz at the Rancho Hanover, State of Vera Cruz, Mexico.

It appears that the two forms are not only specifically, but generically distinct, as the venation shows, and *Inguromorpha* will have to be restored to our lists. Mr. H. Edwards relied on Abbot's unpublished plates for authority in associating these moths as sexes of one species; but in these same unpublished

plates the author has associated together as sexes of one species *Natada nasoni* and *Apoda rectilinea*, and has put the wrong larvæ to several other species of Eucleidæ, so that his authority is of little value.

The species will stand thus:

INGUROMORPHA BASALIS Walker.

1856—*Cossus basalis* Walker, Cat. Brit. Mus., vii, 1523.

1888—*Inguromorpha slossonii* Hy. Edw., Ent. Amer., iii, 183.

1891—‡ *Cossula basalis* Hy. Edw., ENT. NEWS, ii, 71.

Fore wings: vein 1 furcate at base, sinuate, joining vein 1c for its outer fourth; veins 2 to 5 about equally spaced, remote from base of cell; 6 below apex of cell; 7 and 8 stalked from end of cell; 9 from accessory cell; 10 from accessory cell, touching 11, which arises from middle of cell; 12 from base.

Hind wings: veins 2 to 5 as in fore wings, 4 and 5 from the same point; 6 and 7 close together at apex of cell; 8 remote from 7, joined by a strong cross-bar at the end of the cell; frenulum moderate.

Legs short; hind tibræ with apical spurs only; ♂ antannæ bipectinated to the tip.

COSSULA MAGNIFICA Stecker.

1876—*Cymatophora magnifica* Streck, Proc. Ac. N. Sci. Phil., 151.

1882--*Cossula magnifica* Bailey, Papilio, ii, 93.

1891—*Cossula* ‡ *basalis* Hy. Edw., ENT. NEWS, ii, 71.

1894—*Cossula* ‡ *basalis* Neumoegen and Dyar, Journ. N. Y. Ent. Sc., ii, 163.

Fore wings: vein 1 furcate, free; veins 2 to 5 about equally spaced, remote from base of cell; 6 to 8 free, from the discal cell; 9 and 10 stalked from apex of accessory cell; 11 from accessory cell; 12 from base.

Hind wings: veins 2 to 5 as on fore wings; 6 and 7 from the apex of cell; 8 remote from 7, free, stronger than 7, which fades out toward base.

Legs moderate; hind tibræ with both middle and apical spurs; ♂ antennæ bipectinated to the tip.

———o———

A NEW HYPOPTA.

By HARRISON G. DYAR.

Hypopta anna n. sp.—Lilacine gray, thorax and fore wings finely dotted with brighter scales: a distinct, narrow, bent white fleck at the end of the cell on discal cross-vein; an obscure, broad, dusky shade crossing the wing just beyond the fleck, broadening and reddish tinged on internal margin; a few blackish strigæ, most distinct as double terminal dots on the veins, not forming reticulations. Hind wings dark ashen. Antennæ dark, the shaft scaled in gray. Expanse 29 mm.

One ♀, Miami, Florida; type No. 4072 U. S. National Museum; kindly presented to the Museum by Mrs. A. T. Slosson. A second specimen is in Mrs. Slosson's collection.

TWO NEW SPECIES OF HESPEROCHARIS.

By W. SCHAUS.

Hesperocharis jaliscana sp. nov.—Wings white in the ♂, pale lemon color in the ♀; the primaries with the apex and outer margin above vein 3, suffused with black. Secondaries below bright yellow; a crimson spot at the base; a black spot below the cell; a costal and subterminal row of angular smoky spots. Ex. 50 mm.

Hab.—Guadalajara, Mexico.

This species is allied to *H. Crocea*, Bates, though very distinct.

Hesperocharis paranensis sp. nov.—Wings white, tinged faintly with green; the outer half of costal margin finely black. Minute triangular black spots at the apex and along the extreme outer margin between the veins on the primaries. Underneath primaries whitish; the apex and costal margin yellowish; some minute black marginal marks. Secondaries below yellowish; a black point at the base, an antemedial, medial and postmedial irregular and angular black line broken by the veins; minute black spots in the extreme margin, between the veins. Ex. 35 mm.

Hab.—Castro Parana.

This species is readily distinguished by its small size and broken lines on the secondaries below.

———o———

ANOTHER YELLOW PERDITA.

By T. D. A. COCKERELL, N. M. Agr. Exp. Sta.

Perdita wootonæ n. sp. ♀.—Length about or nearly 6 mm. Resembles the ♀ of *P. luteola*, but a paler shade of yellow (to correspond with the *Mentzelia* flowers). A little black pigment behind the middle ocellus; and a short black stripe proceeding from each lateral ocellus, pointing in the direction of the centre of the eye. Hind margins of first two abdominal segments more or less (sometimes hardly) infuscated. Hind tarsi black, middle and hind tibiæ with a black stripe. Second submarginal cell broader at top than in *luteola*.

Hab.—Five or six miles beyond Tularosa, New Mexico, on the road to the mountains, at flowers of *Mentzelia multiflora* or *wrightii*, end of August, 1897 (E. O. Wooton). *

*Mr. S. N. Dunning has sent me four samples of *Perdita wootonæ*, which he took at flowers of *Mentzelia* at Denver, Colo., July 20, 1897. The ♂, which is among them, differs from the ♀ in the orange flagellum (without any black). The dot (instead of stripe) before the eyes, and the absence of the black stripes extending toward the eye from the lateral ocellus. The abdomen is more convex, and deeper yellow.—*T. D. A. C.*

This pretty tree is named after Mrs. Wooton, who accompanied her husband on his recent collecting trip, and greatly assisted in getting together a set of New Mexico plants which will do much to advance the knowledge of the botany of this region. When *P. luteola* was discovered it seemed a remarkable instance of departure from the normal types of bee-coloration for protective purposes. The finding of *P. beata* gave us a second instance of the same sort, and now in *P. wootonæ* we have a third. It remains, however, to discover a pure white species visiting white flowers!

I notice (ENT. NEWS, 1897, p. 172,) that Mr. Robertson would refer my *Panurgus lustrans* to *Halictus*. I may as well publish the generic or subgeneric name, *Hemihalictus*, which I have had in MS for a long time. *Hemihalictus* has about the same relationship to *Halictus* that Mr. Robertson's *Parandrena* has to *Andrena*. In some of its characters it is like *Chilicola*, Spinola, but it is evidently distinct.

———o———

A NEW PODURAN OF THE GENUS GNATHOCEPHALUS.

By F. L. HARVEY.

Generic characters as given by Mr. Macgillivray.

Gnathocephalus aureo-fasciatus sp. nov.—Body robust, broadest behind, pale purple, with the mesothorax and the last two abdominal segments pale orange, ornamented with beautiful tubercles, that are obtuse conical, becoming longer and more pointed on the posterior segments and armed with scattering long bowed, blunt pointed hairs, that curve backwards and are more abundant on the posterior segments; head small, nearly round, narrower than the first abdominal segment, depressed at the sides, center bearing a raised pentagonal plate, one of the angles of which points between the antennæ, the opposite side concave; eye spots dark, extending the whole length of the lateral sides of the pentagonal plate and located upon its sloping edge; back of the central plate on the head is an oblong transverse ridge or plate extending to the first segment; buccal cone stout, once and a half as long as the first antennal segment; antennæ short, stout, segments nearly equal, the first broadest, second slightly shorter with swollen sides, third and fourth about the same width, cylindrical, the terminal one slightly longer than the other segments and obtusely rounded at the end, all segments armed with tubercles and hairs and curved outwards, suture between third and fourth segments obscure; under side of abdomen and legs lighter, the under side of mesothorax, the second pair of legs and the ventral of the last two segments paler than the other portions, to agree with the corresponding lighter dorsal parts; legs stout, short, no tenent hairs, armed

with scattered bristles arranged in transverse rows. Claws short, furrowed beneath, swollen toward the base on the under side and armed on the edge with five bristles that increase in length outwards. A single claw, but at the base two tubercles the basal one longer and larger. See Fig. 1, Furcula short, stout, manubrium broad at base, rounded between the dentes, dentes and mucrones together about equal to the manubrium, dentes curved outward then inward, cylindrical, plain, curved inward at the tips, as shown in Fig. 3. Length of longest specimens 1.5 mm.

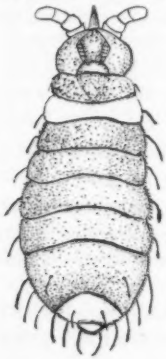


Fig. 1.

Fig. 2.

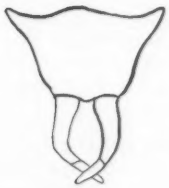


Fig. 3.

Measurements:—Total length 1.2 to 1.5 mm.; Antennæ .21 mm. ratio of joints 10:9:10:12; Buccal cone .08 mm., claw of foot .06 mm.; Furcula .26 mm., ratio of parts 3:2:1: nearly; Tubercles on sides of body about .005 mm.; Hairs on body of about .09 mm.

Described from five specimens found on a decorticated log in low damp woods, Orono, Maine, September, 1897, by F. L. Harvey.

Remarks.—A sluggish form that reminds one of *Aphoromma*. They live in the worm holes of decaying fallen trunks. As soon as the log was turned over, they became restless and crowded toward the worm holes and several disappeared before I could catch them. The species is evidently scarce as I have collected these small insects for several years and never saw this species before. I have visited the locality several times and have never been able to catch any more.

The species is easily recognized by the orange on the second and two posterior segments, giving the body a transversely banded appearance.

Description of figures.—Fig. 1 shows the dorsal aspect of the insect enlarged about 40 times; Fig. 2 represents the claw enlarged 637 times; Fig. 3 the furcula enlarged 100 times.

ENTOMOLOGICAL NEWS.

[The Conductors of ENTOMOLOGICAL NEWS solicit, and will thankfully receive items of news, likely to interest its readers, from any source. The author's name will be given in each case for the information of cataloguers and bibliographers.]

To Contributors.—All contributions will be considered and passed upon at our earliest convenience, and as far as may be, will be published according to date of reception. ENTOMOLOGICAL NEWS has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, three weeks before date of issue. This should be remembered in sending special or important matter for certain issue. Twenty-five "extras" without change in form will be given free when they are wanted, and this should be so stated on the MS. along with the number desired. The receipt of all papers will be acknowledged.—ED.

PHILADELPHIA, PA., NOVEMBER, 1898.

On Sending Insects by Mail or Express. For Professors of Entomology, Specialists, Experiment Station Entomologists, Beginners and Others.

WE receive so many insects in a broken condition, especially those sent to the NEWS for determination, that we think a few words on packing and transportation will be appropriate. We also think we should receive some reward for our trouble in naming and not be compelled to drop the specimens in the waste basket. **Never send pinned or spread specimens in a single box without an outer cover.** Have the box which is to contain the specimens as light in weight as is consistent with strength; a good plan is to glue little square uprights in each corner of the box, and these will help support the lid and will stand great pressure. Have the box lined with **quarter-inch** cork, compressed cork or yucca pith. Drive the pins well in; should one heavy specimen become loose it will ruin all the rest. Have the box proportionate to the number of your specimens, and pin them as closely as you can without injury. This box should then be placed in a larger one and the space between the two filled all around with some springy material, such as hay, cotton, excelsior packing, etc., **loosely packed in. Don't** use an outer box **without having sufficient space between it and the inner**, as it is a waste of time and money and it will be useless. **Don't** pack the springy material so tightly between the boxes that it will do no good as a preventive of jarring.

Don't have the boxes come in contact at any point. An inch and a half space between the boxes should be the minimum allowable. If the specimens are many and the box large, send by **express.** The outer box may be card-board. When sending Coleoptra with heavy bodies or large moths, always secure the body by a wisp of cotton, which should be put on as follows: Take a wisp the required length and tease it out about one-half inch in width, run the pin through one end and give it a couple of turns around the pin so that it holds tightly and lies close to the place where the pin issues from the thorax, then bring it around the end of the abdomen and fasten to the pin above by a couple of turns. If the bodies are very large, as in the Sphinges, a pin should be placed on either side of the abdomen to prevent them swinging around on the pin. Always remember if one becomes loose it ruins many, and "one fine, faultless specimen is worth no end of trash." Neuroptra, Odonata should always have a **bristle passed through the abdomen** into the thorax when fresh, otherwise they are almost always broken off in transportation. Always put your name and address in the inner box. (Reprinted in part from vol. 3, p. 41.

BITTEN BY A FOREIGN INSECT.—A trolley conductor may lose a foot as a result. John Gifford is confined to his home, in Stockton, with a very badly swollen foot, the result of a bite of a strange insect. Several days ago a number of foreign laborers occupied a trolley car of which Gifford was conductor. After they left, he says, he felt an itching on his foot. He found a small insect, which, one of the passengers said, was an Italian moth, which the people of Italy hold in great dread. No attention was at first paid to the bite until Gifford's foot became swollen as large as his head. Dr. Jerome Artz says the bite is a peculiar one, and fears there may be serious results.—*Newspaper.*

ONE Summer morning I was awakened by the excited buzz of a large flesh-fly. On opening my eyes I was surprised to see her coursing madly about the room pursued by two houseflies. She circled about the room several times with the houseflies close behind her; but when she finally alighted upon the window-pane they left her. This scene was enacted several times and thus had the appearance of a sport voluntarily indulged in on the part of the blow-fly.

Some time after some honey-bees, whose hive had been disturbed, found their way into our rooms and to my surprise were set upon in the same manner by the houseflies and driven to precipitate flight. Can anyone explain this?—FREDERICK KNAB, Chicopee, Mass.

DEPARTMENT OF ECONOMIC ENTOMOLOGY.

Edited by Prof. JOHN B. SMITH, Sc.D., New Brunswick, N. J.

Papers for this department are solicited. They should be sent to the editor, Prof. John B. Smith, Sc.D., New Brunswick, N. J.

The meeting of the Association of Economic Entomologists at Boston, August 19th and 20th, was a very enjoyable occasion for those present, and among them were some who, like Dr. S. H. Scudder, are not frequent attendants. On the other hand, a number of those who, like Dr. Fletcher, had been regular attendants at previous meetings were unfortunately detained from this.

The program was so well filled that it was necessary to hold an evening meeting on both days, although from this should be deducted an afternoon spent at and near Malden as the guests of the Gypsy Moth Committee, in inspecting the work done in the direction of exterminating this moth.

As an introduction to this pest, Mr. E. H. Forbush, the field director, made an interesting statement of the recent work of the Committee, which, as a report of progress, is very encouraging. There does not seem to remain any doubt of the fact that this insect can be actually exterminated; *provided*, and this provision is an exceedingly important one—sufficient funds are available just when and where needed. Every entomologist will readily see the importance of this, for with an insect that breeds as rapidly as this moth and has so few natural enemies, a year's neglect of one center may be sufficient to put back the final date of extermination for several years. It is an unfortunate thing that not once since the beginning of the work has there been appropriated the full sum asked for by the Committee, made available at the time when it was most needed. This has been unfortunate, because it has really increased the cost of the work by a very large per centage. A colony that could be cleaned out for a few hundred dollars one year, but is neglected because other colonies are more threatening, will cost as many thousands the year following. A number of the visitors at Malden, who were familiar with the work of the Committee through its publications, were utterly astonished when the practical side was witnessed in operation. There was an opportunity to see the work done by the spraying machines, including the action of the "monitor" nozzle, devised by Mr. E. W. Ware, who is in charge of the mechanical department. The operation of burning over infested ground by means of a lighted oil spray was also witnessed. The guides in charge of this excursion gave the members an opportunity of viewing the worst infested spot, and most of them had their first opportunity of seeing living gypsy moths, a few late females being yet engaged in ovipositing. The work of this Committee is entitled to the highest praise, and it was the unanimous judgement of the members present that if those in charge of the work be given full swing and sufficient means to carry out their plans, the thing for which the Committee was created will be accomplished in the not too distant future.

Incidentally it was possible to observe the eggs and larval stages of the

brown-tail moth, which is also present at Malden, and Prof. Fernald, in a paper read before the Association, gave a very interesting description of the way in which, during the Summer of 1897, this moth has spread over a considerable extent of territory. This spread is charged to a very heavy gale, lasting 2 or 3 days, which occurred exactly at the time when the moths were mating and most active, and the result of this distribution is a number of isolated colonies, which will be very difficult to discover for some time to come. The work of destroying this insect has also been saddled upon the Gypsy Moth Committee; but without increasing the means at their command for doing it. If the writer may be allowed an opinion, this brown-tail moth is apt to prove considerably more troublesome than the other imported pest. We have here a female that flies quite readily, and while the flight is not usually a very long one, still even a moderate wind may carry an impregnated female a considerable distance from the original colony, and this may result in the establishment of so many centres that are almost impossible to discover, that dealing with the insect by State authority will have to be abandoned. There is quite enough difference between these two species, the brown-tail and the gypsy moth, to change the prognosis on the question of extermination.

Appropos of this same general matter, Mr. A. H. Kirkland gave some account of experiments with insecticides against the larva of these two moths. Practically the Committee is relying upon arsenate of lead as the most satisfactory insecticide, and their apparatus for and applying, leaves very little to be desired.

One session was held jointly with the Society for the Promotion of Agriculture, at which entomological papers of general interest were presented. An interesting paper from Mr. F. M. Webster was read by the Secretary, its writer being unfortunately absent. It dealt with the question of the San José scale in Ohio, and its general conclusions were decidedly encouraging. Mr. Webster has found that, practically, the whale oil soap is the most satisfactory remedial measure, and that in peach orchards it has had a double effect, not only killing the scale, but also preventing leaf curl, which during the early part of 1898 was so wonderfully prevalent.

Mr. C. M. Weed recounted some very interesting observations on the food of the song sparrow, the object being not so much to discover the character of the food, but the number of times that the parent birds carried it to the young. Nothing could be better calculated to bring out the importance of birds in controlling insects than observations of this kind, which indicated that an enormous number of insects were required to bring up a brood of even small birds.

The writer of this note presented some thoughts on the question of quarantine against injurious insects, and how far it could be effective. It was pointed out that while it might be easily possible to exclude certain definite known species, a general attempt to exclude all insects that might become troublesome would be impractical. It was also pointed out that if the law provided for certificates to be given by entomologists of foreign countries there would be practically no protection, because of the number of insects that would necessarily escape observation made on growing stock only.

The San José or pernicious scale was the subject for several communications before the Association. Mr. W. E. Britton spoke of the scale in Connecticut and of its distribution there. Mr. R. A. Cooley, in a general paper on the scale insects of New England, brought in incidentally the distribution of this pernicious scale in Massachusetts. Prof. W. G. Johnson gave a very interesting account of the effects of hydrocyanic acid gas as a remedy for this scale. The experiments made by him in Maryland with this gas have been absolutely successful; and a very large number of trees has now been treated and apparently cleaned completely by the use of this method. Aside from the first cost of the tents the fumigating method seems to be the cheapest and on the whole the most effective. Kerosene has been found thoroughly unsatisfactory in his experience. On this point the experience of Prof. Hopkins, of West Virginia, and Prof. Alwood, of Virginia, differed, for these gentlemen have found it possible to use kerosene satisfactorily under proper conditions. Prof. Johnson's results seem to stand alone in the very serious injury caused on a large variety of fruit trees. The writer's experience in New Jersey, where many hundreds of trees were treated during the winter of 1897-98, was that, except for young peach trees, nothing was harmed to any extent.

New Jersey's contribution to this scale literature was a statement of the extent of the distribution of the scale in that State. It was pointed out that the area of infestation was relatively very small, and that practically there were only two or possibly three important centers of infestation. The maps usually published, showing the distribution of the scale in the United States, was unfair to New Jersey, because points of infestation are marked with such large spots that, while half a dozen of them will readily find a place in Ohio or Illinois, the same number would be sufficient to almost blot out New Jersey altogether. A map was shown giving the exact distribution of the scale so far as it was known at that time.

Mr. A. F. Burgess showed a series of specimens of *Adalia bipuncta* and its variety *humeralis*, and detailed the records of breeding the variety from the normal form, and the results of breeding the variety upon itself and upon the parent form.

Mr. E. P. Felt gave a very interesting record of the egg-laying habits of the elm leaf beetle, and also notes on the principle insects that had proved troublesome in New York State during the Summer of 1898.

On the same line Prof. A. D. Hopkins presented notes on observations in West Virginia since the Buffalo meeting. A number of the matters brought up under these notes were discussed by the members present. One feature was indirectly brought out; that is, that the entomologists are getting a grip on their states that enables them to keep posted in a general way as to what is going on in all parts of it.

Dr. L. O. Howard called attention to some beneficial insects recently imported from abroad, and detailed some attempts that had been made to introduce parasites into new localities; also the interesting discovery

of parasites in localities where their presence had not been heretofore suspected. Some "recent housefly and mosquito experiments" were also explained, and the details of a practical attempt to reduce the number of houseflies in the vicinity of the United States Department of Agriculture, and the number of mosquitoes on certain portions of Staten Island were given. There seemed to be an inclination to suggest that there was very little use in trying to exterminate the mosquitoes on Staten Island, unless those in New Jersey could also be included. The question was raised and not satisfactorily answered as to the habits of flight of mosquitoes. Under what circumstances do they fly? How far may they fly, and are they likely to be carried by the wind: if so, what kind of wind is likely to carry them? In other words, it seems as if there was yet considerable to be learned, even about so common and well known an insect as a mosquito.

Incidentally, it may be remarked that there are mosquitoes in New Brunswick, and sometimes even a considerable number of them. At my own residence the piazza on the lower floor is practically uninhabitable with comfort on many evenings of the Summer; but a balcony on the floor above is almost entirely free from their visitations, except when there is absolutely no air stirring; and even then only occasional specimens rise to this height while dozens of them occur on the floor below.

Another point that was brought out by Dr. Howard was that there are really two species of *Pulvinaria* on maples. One of these is confined to the twigs, the other inhabits by preference the leaves. The two species may not occur together on one tree; but either or both may be present. Further, our knowledge of the actual life-history of this insect is not nearly so complete as has been supposed, and in view of the fact that two species have been mixed, the whole subject must be restudied.

Prof. F. W. Rane spoke on the insect fertilization of musk-melons, mentioning a number of insects that visited the flowers of these plants, and giving some observations on the subject of the fertilization of this fruit.

Mr. C. M. Weed presented a number of notes on tent caterpillars, adding a number of new facts concerning the habits of these insects.

Prof. W. B. Alwood detailed some observations made on the life-history of the tomato-hawk moth and on the wooly apple louse.

A number of papers were read by title only, because the time was too brief to admit of their being read in full, and so also the discussion of many of them was kept down for a similar reason.

Finally, though not the least interesting, the address of the President, Prof. Herbert Osborn, must be mentioned. It will repay careful perusal when published, and its teachings merit the study and, I believe, the acceptance of the earnest and conscientious student. An abstract is hardly possible in this connection for it would be difficult to say what should be omitted.

Altogether the meeting was a very successful and satisfactory one, and it brought out a number of young men who had not been heretofore known as attendants.

Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

Caterva catenaria.—Our town swarms with them—so many that it shut off the electric lights by filling up the globes.—M. C. BARNER, D. D. S., Jersey Shore, Pa.

THEY were all directed against the secretary of agriculture. The first advised him to experiment in his entomological division with crossing the lightning bug with the bee, in order that the busy insect could see to work at night. The second looked to the crossing of the centipede with the hog in order that the usual Populistic idea of finance might receive demonstration in 100 hams to a hog. The third advised the budding of the strawberry plant with the milkweed so that strawberries and cream could be had in natural conjunction.—*Newspaper.*

A TAME BUTTERFLY.—I had been collecting on a very warm day in July, in the Orange Mountains, and had been perspiring freely, although I was in my shirt sleeves. Walking slowly through the open woods, I noticed a *Grapta comma* hovering quite near, which, at length, alighted on my shoulder; out of curiosity I refrained from capturing it, but gently shook it off. Whereupon it flew a short distance, circled about me and alighted on the same shoulder. I was quite interested now as it was becoming bolder, and it required a rapid movement of the arm to cause it to fly, only to return to the same arm. I made another move but more violent than at first to make it fly; but after flying a short distance it came back for the last time and landed on my chest, where I watched it for some time, and noticed that it would unroll its tongue as though it were trying to sip. Was it attracted by the smell of perspiration.—A. J. WEIDT, Newark, N. J.

INSECTS MENTIONED IN THE BIBLE.—By careful study I find the *beetles* mentioned but once in the Bible and that is where the Lord spoke to Moses and Aaron "these ye may eat;" the *gnat* also but once as Mathew tells us in 23d; the *ant* is found twice in the Proverbs of Solomon, and the *flea* twice in the 1st Book of Samuel; the *spider* and *palmerworm* three times; the industrious *bee* four times; *lice* five times; *fly* and *flies* six times, also the *cankerworm* six times, being followed by the *scorpion* seven times; then comes the *moth* and *caterpillar* as often as nine times; while the grasshopper appears but ten times; but the *worm and worms* is mentioned nineteen times; while the *locust* beats them all with twenty-four. The mite is mentioned three times, but as money; the worm is mentioned three times as an evil conscience, and the scorpion four times as a lash.—EUGENE R. FISCHER.

LARVA of *Cerura multiscripta* as cannibals. On June 13th I placed about twenty-five eggs of *Notodonta stragula* in a jar with some larva of *Cerura multiscripta*, and on cleaning out the jar to put in fresh leaves a few days after, I found that all the eggs were hatched, but I found no more than six larva of *N. stragula*. Were they eaten by the larva of *C. multiscripta?*—A. J. WEIDT, Newark N. J.

BUTTERFLY FOOD.—Since publishing my notes upon the feeding habits of *Eudamus lycidas*,* I have had further opportunity to observe that species, and will add that it does not invariably move around while feeding, as did the first that I saw. I have also seen *Eudamus tityrus* feeding in the same manner. It had settled upon a smooth, hard piece of ground, and seeing it curve the abdomen, I managed to get close enough to see the fluid ejected and eaten. The species are so closely allied that this was not unexpected.

Dr. Hoeg's observation of what was probably *hobomok* doing the same thing, gives us reason to suppose that the whole group of Hesperidæ manipulate their food in this manner.

It was formerly believed that "nectar" underwent a chemical change in the honey-sac of the bee, thus fitting it for food. It is said now, I think, that this is untrue, and that honey is made in the hive. But for lack of a better, this theory may be revived for our Hesperidæ, and, perhaps, eventually for all lepidoptera. We may guess that they make honey, but being of a lower organization than bees, perform their work in a more primitive manner.

Will not some chemists and microscopists take up the subject now and tell us what butterfly food really is and where it is kept?—G. M. DODGE, Louisiana, Mo.

THE noted murderess commits suicide by eatiug spiders—a notorious career.—Cora Smith, the noted murderess confined for life in Anamosa Penitentiary, this State (Iowa), is dead. The prison authorities pronounce her death the result of eating spiders, with suicidal intention. She was 24 years of age and in perfect health up to the time of her death. A handful of dead spiders in her handkerchief, obtained, it is thought while she was taking daily exercise, in the outer courts of the prison, was found in the cell beside her dead body.

Her career in Iowa is notorious. Her mother several years ago had been convicted in Des Moines and sentenced to life imprisonment for the murder of her husband. Cora Smith, then an inmate of a house of ill-fame in Omaha, decided to confess that she alone committed the murder. In doing so she secured a life sentence, but failed to effect her mother's release. The latter's case was appealed and reversed so that she got a new trial, but she was again convicted and sentenced for life. Her case has been appealed a second time.†—*Newspaper.*

* Page 89.

† We would like to hear from those studying spiders, as we can't credit the above tale.—Eds.

Entomological Literature.

Under the above head it is intended to note such papers received at the Academy of Natural Sciences of Philadelphia pertaining to the Entomology of the Americas (North and South). Articles irrelevant to American entomology will not be noted. Contributions to the anatomy, physiology and embryology of insects, however, whether relating to American or exotic species, will be recorded. The numbers in **heavy-faced type** refer to the journals, as numbered in the following list, in which the papers are published; * denotes that the paper in question contains descriptions of new North American forms. Titles of all articles in foreign languages are translated into English; usually such articles are written in the same language as the title of the journal containing them, but when such articles are in other languages than English, French, German or Italian, this fact is indicated in parenthesis.

4. The Canadian Entomologist, London, Ont., Oct., '98.—**5.** Psyche Cambridge, Mass., Oct., '98.—**6.** Journal of the New York Entomological Society, Sept., '98.—**8.** The Entomologist's Monthly Magazine, London, Oct., '98.—**9.** The Entomologist, London, Oct., '98.—**11.** The Annals and Magazine of Natural History, London, '98.—**21.** The Entomologist's Record, London, Sept. 15, '98.—**22.** Zoologischer Anzeiger, Leipsic, '98.—**38.** Wiener Entomologische Zeitung, xvii, 7-8, Sept. 10, '98.—**40.** Societas Entomologica, Zürich-Hottingen, Sept. 15, '98.—**53.** Transactions and Proceedings, New Zealand Institute, 1897. Wellington, June, '98.—**55.** Le Naturaliste, Paris, Sept. 1, '98.—**56.** Mittheilungen der schweizerischen entomologischen Gesellschaft, Schaffhausen, x, 3, June, '98.—**79.** La Nature, Paris, Sept. 10, '98.—**84.** Insekten Börse, Leipsic, Sept. 29, '98.—**86b.** Bulletins, Société Entomologique de France, Paris.—**87.** Revue Scientifique, Paris, '98.—**92.** Illustrierte Zeitschrift für Entomologie, iii, 16, 17. Neudamm, Aug. 15, Sept. 1, '98.

The General Subject.—Bouvier, E. L. On the geographical distribution and evolution of *Peripatus;* New observations on *Peripatus* (transl. from C. R. Acad. Sci. Paris), **11,** Oct.—Donisthorpe, H. St. J. K. The Fourth International Congress of Zoology, **21.**—Tutt, J. W. The migration and dispersal of insects: general considerations, **21.**—Wasmann, E. The guests of ants and termites, **92,** 16.

Economic Entomology.—Chittenden, F. H. The striped cucumber beetle, figs. Circular 31, 2nd series, U. S. Dep't. Agriculture, Washington, April 26, '98.—Coupin, H. The San José scale, figs., **79,** Sept. 24.—Debray. The destruction of injurious insects, **55,** Sept. 1.—Foa, E. The poisonous tsé-tsé fly, Bulletin, Societe Nationale d'Acclimatation de France, Paris, April, '98.—Hariot, P. The danger of importation of injurious insects into the United States, **55,** Sept. 1.—Howard, L. O. Danger of importing insect pests, figs. Year Book, U. S. Dep't Agriculture for 1897. Washington, '98.—Jablonowsky, J. The San José scale [in Hungarian], Rovartani Lapok, Budapest, June 1, '98.—Johnson, W. G. Report on the San José scale in Maryland, and remedies for its suppression and control (116 pp., 22 figs.), Bulletin 57, Maryland Agric. Exper. Station, College Park, Md., Aug. '98.—[Manson, P.] Malaria and the theory of mosquitoes, **87,** Sept. 3.—Redemann, G. The apple roller *Carpocapsa pomonana,* injuries, habits and

means of destroying, **40.**—Rhoads, S. N. "Noxious" or "beneficial"? false premises in Economic Zoology, American Naturalist, Boston, Aug., '98.—Sch., S. On the destruction of injurious insects, **84.**—Sirrine, F. A. A spraying mixture for cauliflower and cabbage worms, 6 pls., Bulletin 144, New York Agricul. Exper. Station, Geneva, N. Y., Sept. '98.—Strachan, H. and McCorquodale, W. H. Larvæ in antelope horns, Nature, London, Sept. 15, '98.

Arachnida.—Acloque, A. Spiders' silk, figs., **79,** Sept. 17.—Banks, N. Three myrmecophilous mites,* **4;** Some Mexican Phalangida, **6.**

Orthoptera.—Cockerell, T. D. A. New North American insects,* **11,** Oct.—Hutton, F. W. The grasshoppers and locusts, Phasmidæ, Hemiptera, of New Zealand and the Kermadec Islands, 1 pl. (3 papers), **53.**—Morse, A. P. Notes on New England Acridiidæ iv, Acridiinæ iii, **5.**—Walker, E. M. Notes on some Ontario Acridiidæ (cont.), **4.**

Neuroptera.—Davis, W. T. Preliminary list of the dragonflies of Staten Island, with notes and dates of capture, **6.**—v. Linden, M. On the life of caddis-flies, figs. Naturwissenschaftliche Rundschau, Braunschweig, Sept. 25, '98.—McLachlan, R. What is *Libellula ænea* Linné?: a study in nomenclature, **8.**—Wasmann, E. See the General Subject.

Hemiptera.—Alemán, J. On a Mexican *Aleurodes* (*A. dugesii* Ckll. n. sp),* La Naturaleza, iii, 1-2, Mexico, '98.—Cockerell, T. D. A. A new Aleurodes on oak,* **4;** A new scale insect found on barberry,* **4;** The Coccidæ of the Sandwich Islands, **9;** See Orthoptera.*—Davis, W. T. The seventeen-year locust on Staten Island in 1898; The hickory tree Phylloxera at West New Brighton, Proceedings, Natural Science Association of Staten Island, New Brighton, N. Y. Sept. 10, '98.—Giard, A. On the scale insects of the genus *Orthezia* Bosc., **86b,** '98, No. 1.—Gillette, C. P. American leaf-hoppers of the subfamily Typhlocybinæ,* 149 figs., Proceedings, U. S. National Museum, No. 1138, Washington, '98.—Hüeber, T. Synopsis of the German Capsidæ iii, Jahreshefte, Verein für vaterlandische Naturkunde in Württemberg, liv. Stuttgart, '98. Hutton, F. W. See Orthoptera. Lounsbury, C. P. *Diaspis amygdali* Tryon, **4.**—Maskell, W. M. Further Coccid notes: with descriptions of new species and discussion of points of interest, **53.**—Townsend, C. H. T. and Cockerell, T. D. A. Coccidæ collected in Mexico by Messrs. Townsend and Koebele in 1897,* **6.**—de Varigny, H. The seventeen-year Cicada, **87,** Sept. 17.

Coleoptera.—Brauns, H. A new Dorylid guest of the mimicry type, fig., **38.**—Escherich, K. On the life-history of *Thorictus Foreli* Wasm. figs., **22,** Sept. 5.—Fall, H. C. A correction [in *Attalus*], **4.**—Felsche, F. Verzeichniss der Lucaniden, welche bis jetzt beschrieben sind. Leipzig, Ernst Heyne, 1898. 89 pp., 8vo.—Gorham, H. S. On the serricorn Coleoptera of St. Vincent, Grenada and the Gre-

nadines (Malacodermata, Ptinidæ, Bostrychidæ), with descriptions of new species, 1 pl.; On the Coleoptera of the families Erotylidæ, Endomychidæ and Coccinellidæ, collected by Mr. H. H. Smith in St. Vincent, Grenada and the Grenadines with descriptions of new species, Proceedings, Zoological Society of London, 1898, pt. ii, Aug. 1.—Lea, A. M. Revision of the Australian Curculionidæ belonging to the subfamily Cryptorhynchides, Proceedings, Linnean Society of New South Wales, '97, pt. iii, Sydney, Feb. 11, '98 (recd. Sept. 19).—Lesne, P. On the 'ferrier' of the larva of *Cicindela hybrida* L., fig., **86b,** '97, 17.—Schoch, G. Supplement VII to the 'Genera and Species of my Cetonid collection,' **56.**—Weise, J. On new and known Coccinellidæ, Archiv fur Naturgeschichte, lxiv, i, 2, Berlin, Aug., '98.

Diptera.—Cockerell, T. D. A.* See Orthoptera.—Coquillett, D. W. On the Dipterous family Scatophagidæ* **6;** A new Dipterous genus belonging to the Therevidæ, **6.**—[Manson, P.] See Economic Entomology.—Mik, J. Some words on Dr. Wandolleck's Stethopathidæ and a new wingless and haltereless Dipteron, 1 pl., **38.**—Townsend, C. H. T. Diptera of the Organ Mountains in southern New Mexico,* **5.**

Lepidoptera.—Chapman, T. A. The structure of the spiracles in Lepidoptera, **21.**—Cockerell, T. D. A.* See Orthoptera.—Druce, H. Descriptions of some new species of Heterocera from tropical America,* **11,** Sept.—Dyar, H. G. Note on the larva of *Melanomma auricinctarium* Grote, **4;** A new Parasa with a preliminary table of the species of the genus,* **5;** The life histories of the New York slug caterpillars xvi, with certain additions and corrections, 1 pl.; Life-history of *Calybia slossoniæ*, **6.**—Feredey, R. W. A Synonymic list of the Lepidoptera of New Zealand, **53.**—Fernald, C. H. The Pterophoridæ of North America. Massachusetts Agricultural College, Jan., 1898. 80 pp., 9 pls.—Fischer, E. Contributions to experimental Lepidopterology vii, viii, 2 pl., **92,** 16, 17. Grote, A. R, The position of *Pseudopontia* (*Gonophlebia*), **21;** Abbreviations of author's names, **4.**—Kathariner, L. Are flying butterflies persecuted by birds? Biologisches Centralblatt, Erlangen, Sept. 15, '98.—Kunze, R. E. Life-history of the two forms of *Cerura nivea*, **6.**—Lathy, P. I. A new species of *Terias* from Haiti, **8.**—Pierce, F. F. Recent investigations of the hair-pencils on certain male Noctuæ, **8.**—Pauls. Experimental zoological studies of Dr. M. Standfuss, **40.**—Rebel, H. Dr. M. Standfuss' experimental zoological studies on Lepidoptera, **22.** Sept. 19.—Ribbe, C. Introduction to the collecting of butterflies in tropical countries, **84,** Sept. 29,'98.—Seifert, O. Life-history of *Feralia jocosa*, **6.**—Strecker, H. Lepidoptera, Rhopaloceres and Heteroceres, Indigenous and Exotic. Supplement No. 1. Reading, Pa., U. S. A., 1898. Printed for the Author. (50 nn. spp. Noctuidæ,* 1 n. sp. *Apatura*—"the types are all carefully marked in my collection," and a characteristic preface).

Hymenoptera.—Ashmead, W. H. Classification of the horntails and sawflies or the suborder Phytophaga, v, **4.**—Beutenmüller, W. Note on the nest of *Vespa crabro*, 2 pls., **6.**—Cockerell, T. D. A. The North American bees of the genus *Prosapis* (cont.), **9;** See Orthoptera.*—Dufour, L. Bees and honeys, figs., **79,** Sept. 10.—Dunning, S. N. Notes on *Andrena*.* **4.**—Escherich, K. See Coleoptera.—Frey-Gessner, E. Fauna insectorum helvetiæ. Hymenoptera (cont.). Fam. xvi, Apidæ, **56.**—Headley, F. W. Bees and the development of flowers, Natural Science, London, Oct., '98.—Karawaiew, W. The postembryonal development of *Lasius flavus*, figs., 4 pls. Zeitschrift für wissenschaftliche Zoologie, lxiv, 3, Leipsic, Aug. 30, '98.—Kiaer, H. Review of the phytophagous Hymenoptera of arctic Norway, 1 pl., Tromso Museums Aarshefte 19, '98.—Konow, F. W. New Contribution to the synonymy of the Chalastogastra; On the Tenthredinid tribe Lophyrini* (two papers), Entomologische Nachrichten, xxiv, 15-16. Berlin, Aug., '98; On the Tenthredinid genus *Amasis* Leach, **38;** Synonymic and critical remarks on Tenthredinid species incorrectly, or not hitherto referred, **40;** Analytical table for identifying the hitherto described larvæ of the Hymenopterous suborder Chalastogastra, **92,** 16, 17.—Stoll, O. To knowledge of the geographical distribution of ants, **56.**—Wasmann, E. See the General Subject.

Lepidoptera, Rhopaloceres and Heteroceres, Indigenous and Exotic. Supplement No. 1. By Herman Strecker, Reading, Pa., U. S. A. Printed for the author.

This contains the descriptions of fifty new moths and one new butterfly. Next to the scientific interest of the paper we always look to Dr. Strecker for something racy in his remarks, and in the one page of preface we have this as in the days of yore. He was disappointed in an intended plate of the specimens and acknowledges he has joined the big band of sinners, dead and alive, who have published descriptions alone. If the gentleman had made a good photographic negative, and from this a slightly underprinted bromide enlargement, and then retouched with india ink and afterward reduced in the half-tone to natural size again, the result would have been excellent. No one would be more competent to do the slight retouching necessary than the author of this paper.—H. S.

Doings of Societies.

A meeting of Feldman Collecting Social was held September 21, 1898.

Mr. Johnson exhibited a specimen of a species of *Eriocera* in which the discal cell is absent from one wing. A specimen of *E. spinosus* showed an accessory discal cell in one wing. *Longurio testaceus* was shown from Fairmount Park, Philadelphia.

In reply to Prof. Smith, Mr. Johnson said pinning is probably

the best method of preserving Tipulidæ, although great care must be taken in handling them, because of their fragility. He did not prefer alcoholic specimens except for dissection.

The preservation of the color of insects by alcohol and formalin was discussed by Messrs. Smith, Skinner, Johnson, Castle and Gerhard, the speakers agreeing that alcohol is the better of the two for this purpose.

Dr. Skinner reported the capture of *Argynnis atlantis* at North Mt., Pa. It had not before been recorded south of Catskills, N. Y.

He also referred to the abundance of *Callidryas eubule* at Cape May, N. J., in spite of the absence of the supposed food plant of the insect from the region thereabouts. He had found on investigation that it feeds also on *Cassia nictitans*. It has been asserted that it hibernates in the chrysalis, but this seems doubtful, as he had seen the species ovipositing very late in the season, so that it could hardly reach the chrysalis stage by cold weather. He suggested the possibility of hibernation in the larval stage.

Prof. Smith referred to a previous communication on *Augochlova humeralis*. The burrow was described. Nests of broad cells lined with clay and surrounded by an air-chamber are put off at various places along the vertical burrow which may proceed for several feet. The clusters of cells number from 1 to 11. The bees emerge about the middle of July and commence immediately to burrow, making a burrow entirely different from their parents in that instead of brood-cells they sent off from 1 to 3 short burrows or "fingers" along the vertical section. The bees are single brooded. Adult bees had been found in the burrows in September preparatory to hibernation. All burrows found from May to July have brood-cells, but those built after July have not brood-cells, which shows, in the speaker's opinion, that the later burrow is made for hibernation only. The bright metallic color of the insect was commented on as being unusual for a species which spends the greater part of its life underground.

The speaker announced the coming issue of a new edition of the List of Insects for New Jersey and asked for coöperation in its preparation from the members of the social.

WILLIAM J. FOX, *Secretary*.

A meeting of the Entomological Section of The Academy of Natural Sciences of Philadelphia was held September 22nd. Mr. C. S. Welles, Director, presiding. A number of blown-larvæ of *Daremma catalpæ* were presented by Mr. Herman Hornig. Two boxes of Lepidoptra from Manchuria were presented by Dr. A. D. Smith and the Farnum brothers. Dr. Calvert gave a summary of his paper on Burmeister's Types of Odonata, now publishing in the current volume of the Transactions of the American Entomological Society. Mr. C. S. Welles stated that he had been informed that many caterpillars were swarming on the catalpa trees near his home (Elwyn, Del. Co., Pa.), and some of them were nearly defoliated by what he subsequently identified as the larva of *Daremma catalpæ*. He exhibited the imago, larvæ and chrysalids of this moth and said it was a southern species and had not heretofore been noticed in this State in any such numbers, and if it continues to prove so destructive it may become a subject for the economic entomologist. Mr. Liebeck mentioned a locality in the heart of the city where the Ailanthus trees had been denuded of leaves by the larva of *Callosamia cynthia*. The Director spoke of Mr. Gerhard's journey to Bolivia and wished him *bon voyage* and the good wishes of the Section. The latter said he expected to go to Mollendo and then to La Paz, which would be his head-quarters. Lepidoptra would receive first attention, but other orders would not be entirely neglected. All the material will be sent to Mr. A. G. Weeks, Jr. Mr. Liebick referred to the bird-flies (Hippoboscidæ) which he had collected for Mr. Johnson. He had found them on the American bittern and the night-heron only. They are flat and look like a winged tick and slip side-wise spasmodically when an effort is made to pick them up. They try to slip up in narrow spaces like that between a loose cork and the neck of a bottle. They fly with great rapidity and are found under the wing feathers.

DR. HENRY SKINNER, *Recorder*.

A regular meeting was held by the Newark Entomological Society, Sunday, September 11th, at 4 P. M., at Turn Hall. The following members were present: Messrs. Seib, Broadwell, Angleman, Bucholz, Weidt, Bishchoff, Erb and Bunsow. Vice-President Brehme presiding. Mr. Weidt reported a capture of

35 specimens of *Schinia arcifera* in the Orange Mountains, August 28th, and remarked that it was locally common. Mr. Herman Erb exhibited a number of *Paonias astylus* larva almost full grown. Mr. Weidt remarked having taken the larva in June. Mr. Broadwell exhibited some snap shots taken at the field meeting in August. Mr. Weidt reported that *Prodenia commelinæ* was common at light in Newark, September 9th and 10th.

Mr. Herman Brehme read an article on rearing larva successfully: After keeping the larvæ in jars until two weeks old, I placed them in my new breeding cage, the top of which is made entirely of glass, and is 4 feet long, 15 inches deep and 14 inches wide. The bottom is made of wood, zinc lined, and is of the same dimensions as the top, excepting that it is 5 inches deep. In this bottom I put 4 inches of earth and spread manilla paper over the top to keep the cage clean. I then stick small branches of food plant in the ground and it keeps for a week. When the larva is full grown it crawls under the paper and pupates *above the ground* instead of burrowing it to it as is usually the case. Out of 125 larva of *G. luscitiosa* I have lost but three.

The merits of different methods of breeding were discussed at some length by Messrs. Seib, Erb and Bucholz.

Mr. Weidt proposed Mr. S. T. Kemp, formerly of Camden, N. J., who was unanimously elected a member.

Meeting adjourned.

A. J. WEIDT, *Secretary.*

The Newark Entomological Society visited the Brooklyn Institute of Arts and Sciences Sunday, October 9th, at 2.30 P. M. Most of the members brought a box of insects to determine, and all were kept busy untill 4 P. M., when a short meeting was held in a room reserved for the Society by Mr. Jacob Doll, the Curator, at the Institute. President Schlicksor presided, with the following members present: Messrs. Brehme, Weidt, Broadwell, Kircher, Rienecker, Stortz, Kemp, Erb, Angleman and Seib. It was decided that the special meetings which were well attended last winter be continued. Mr. Geo. Kircher proposed Mr. Wm. Straub, of Astoria, L. I., who was unanimously elected.

Meeting adjourned.

A. J. WEIDT, *Secretary.*

N. B.—We now have 14 active and 3 passive members.

EXCHANGES

Not exceeding three lines free to subscribers.

☞ These notices are continued as long as our limited space will allow; the new ones are added at end of the column, and only when necessary those at the top (being longest in) are discontinued.

Identification of Insects (Imagos) for Subscribers.

Specimens will be named under the following conditions: 1st, The number of species to be **limited to twenty-five** for each sending; 2d, The sender to pay all expenses of transportation and the insects to become the property of the American Entomological Society; 3d, Each specimen must have a number attached so that the identification may be announced accordingly. Exotic species named only by special arrangement with the Editor, who should be consulted before specimens are sent. Send a 2 cent stamp with all insects for return of names. **Please put date of capture and exact locality on each specimen.** Before sending insects for identification, read page 41, Vol. III. Address all packages to ENTOMOLOGICAL NEWS, Academy Natural Sciences, Logan Square, Philadelphia, Pa.

Will name and return species of *Nonagria* and *Hydræcia* for the privilege of retaining desirable species a brief period for purposes of study. —John B. Smith, New Brunswick, N. J.

Lepidoptera.—Cocoons of *P. cecropia*, *T. polyphemus* and *C. promethea* to exchange for Lepidoptera not in my collection.—C. D. Heim, 156 Fourth St., Sunbury, Pa.

Fine Ornithoptera: *Miranda* ♂ ♀, *Andromache* ♂ ♀, *Brookiana* ♂ ♀, *Druryia antimachus*, etc., and Bornean Bflies in exchange (for other exotics). Butterflies only, or buy other rare species.—W. Dannatt, F. E. S., Ivy Dene, Westcombe Park, London S. E. England.

Wanted.—Live pupæ of *Luna*, *Io*, *Imperialis*, *Regalis*, etc., will exchange bird skins, eggs, stuffed birds, etc.—John Clayton, Lincoln, Me.

"Cocoons of *Cecropia*, *Cynthia* and *Promethea* for exchange for some cocoons of *Luna* and *Polyphemus*.—Mathias Mertz, 66 Leonard St., N. Y. City.

I will take in exchange for rare and beautiful exotic butterflies, living pupæ and cocoons of *Pap. ajax*, *zolicaon*, *cresphontes*, *Sm. modestus*, *astylus*, *Eacles regalis*, *imperialis*, *Plat. gloverii*, *A. ceanothi*, *columbia* and others.—Chas. F. Timm, 62 Ralph St., Brooklyn, N. Y.

For exchange.—Insect Life, vol. i, 1–2; vol. iii, 1–6. Price 15c. each.—Eugene R. Fischer, 2707 Winnebago St., St. Louis, Mo.

Lepidoptera.—Exchange wanted from all other parts of the United States and Canada for specimens from northeastern Pennsylvania. Correspondence solicited.—Alfred E. Lister, 921 Vine St., Scranton, Pa.

Geometridæ wanted.—Will purchase or give good exchange in other Lepidoptera. Send lists and prices.—Edw. W. Cross, Manchester, N. H.

Longicorn beetles and Parnassius and Pierids in papers wanted in exchange for about 150 species of Orthoptera and Papilios (my own collection), many rarities included.—John Watson, 94 George St., Alexandra Park, Manchester, England.

Odonata.—I want dragonflies from any locality in America, and will exchange for same. Will collect in any order in this region for cash.—M. J. Elrod, University of Montana, Missoula, Mont.

Lepidoptera.—Living pupæ of *Eacles imperialis* for exchange.—H. Meeske, 321 Wyckoff Ave., Brooklyn, N. Y.

Lepidoptera.—Exchange desired with collectors everywhere. I offer Lepidoptera, and will also collect in other orders. Send lists.—Ernest N. Laing, Essex, Ontario, Canada.

Wanted.—Tingitidæ especially from the U. S. All specimens sent for determination will be returned.—F. M. McElfresh, Urbana, Ill.

Tipulidæ.—Will exchange in any order for North American Tipulidæ.—C. V. Piper, Agricultural College, Pullman, Wash.

Am open to collect any order that is required this season to be found in Colorado. Correspondence solicited.—Ernest J. Oslar, 1853 Marion St., Denver, Col.

Lepidoptera.—I have a very large number of rare species of American butterflies in duplicate. Liberal exchange given for desiderata.—Dr. Henry Skinner, Acad. Nat. Sci., 1900 Race St., Phila., Pa.

Tettigidæ.—Specimens of this Orthopteran group wanted from any locality.—J. L. Hancock, 3148 Indiana Ave., Chicago, Ill.

Will exchange butterflies of Missouri and the more common ones of central Texas for others from any part of the U. S. Common ones taken.—H. Schwarz, 1520 Lafayette Ave., St. Louis, Mo.

Lepidoptera.—Will purchase examples of *Hemaris* and *Lepisesia*. Advise condition and price.—Beverly Letcher, 532 California Street, San Francisco.

Butterflies.—I will give Indian and S. American butterflies in exchange for American I will also pay cash for same. Send list with lowest price to Wm. D. Denton, Wellesley, Mass.

Texas Lepidoptera.—Pure and well stretched—to be exchanged. A good many specimens in stock.—Jos. Mattes, 115 Ash St., Logansport, Ind.

Lepidoptera and **Coleoptepa.**—5000 duplicates to exchange; some rarities. Send lists in either order to P. C. Truman, Volga, South Dakota.

Lepidoptera.—I have for exchange pupæ of rare Sphinges, also good material in papers. Will exchange for native and exotics. Send list.—W. Rienecker, 562 Nelson Ave., Jersey City, N. J.

Lepidoptera.—Exchange wanted from all countries, Sphingidæ and Saturniidæ especially desired. Rare cocoons wanted. Address Henry Engel, 153 26th St., S. S., Pittsburg, Pa.

Coleoptera.—Fresh Texas Coleoptera for exchange.—G. Birkmann, Fedor, Lee Co., Texas.

Coleoptera from U. S. for exchange. Send lists. Wish to buy or exchange coleopterological works not yet in my library.—Dr. A. Fenyes, Pasadena, Cal.

Lepidoptera.—Wanted specimens of the family Arctiidae. Will give other Lepidoptera in exchange.—W. E. Longley, 115 64th Ave., Oak Park, Ill.

Lepidoptera.—For exchange a large number of American butterflies and moths in papers, also pupæ and cocoons for native specimens or exotic papilios. G. Kircher, 573 Germania Ave., Jersey City, N. J.

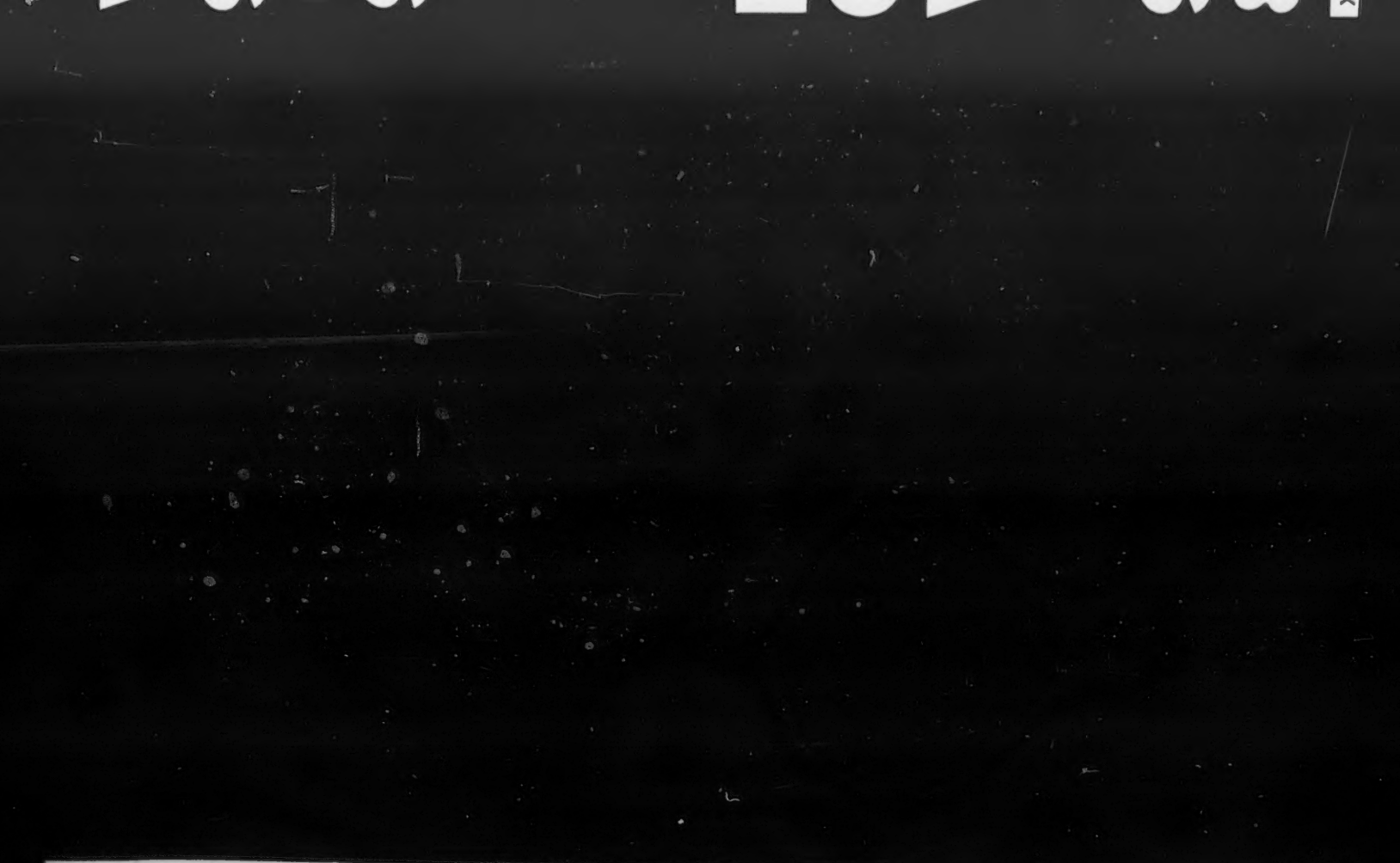
Lepidoptera.—Exchange desired with collectors everywhere. Have also live pupæ of *Parasa chloris*, *Limacodes scapha*, *Datana major* and *Anisota stigma*. Send lists.—S. T. Kemp, 637 Jefferson Ave., Elizabeth, N. J.

Wanted.—A microscope, dissecting or compound, in exchange for Coleoptera or other insects.—Frederick Knab, P. O. Box 249, Chicopee, Mass.

Lepidoptera.—For exchange, pupæ of *Sphinx drupiferarum*, *Sphinx gordius*, *Philampelus achemon*, *Triptogon modesta*, *Gastropacha americana* and others.—B. Neubarth, 1109 Nelson St., Chicago, Ill.

Lepidoptera.—*Argynnis zerene*, *monticola*, *nevadensis*, *Anthocaris hyantis*, *sara* and *stella* for exchange for Noctuidæ or Geometridæ named or unamed. Lists exchanged.—A. J Weidt, 73 James St., Newark, N. J.

Lepidoptera.—*Argynnis diana*, *C. regalis*, *P. achemon*, *P. pandorus* wanted in exchange for New England or Australian Lepidoptera. Correspondence solicited.—E. L. Sawyer, Winchendon, Mass.



IMPORTANT TO LEPIDOPTERISTS.

The new **Synonymical Catalogue of North American RHOPALOCERA,** by Henry Skinner, M.D., Curator Amer. Ent. Soc., etc., is now in press and will be ready early in November. Will be sent on receipt of price, **$1.00.**

Apply to **E. T. CRESSON, Treasurer,**
P. O. Box 248, Philadelphia, Pa.

ENTOMOLOGICAL PUBLICATIONS.

LIST OF LEPIDOPTERA of Boreal America, by Prof. J. B. Smith, 1891, pp. 124, listing 6020 species **$1.00**

CALVERT (P. P.)—Burmeister's Types of Odonata, 1898, 78, pp. 1 pl. **.75**

CALVERT AND HENSHAW.—A Bioghraphical Notice of George Henry Horn, together with a list of his Entomological Writings, 1898, 72 pp. and portrait . . . . . **.50**

DUNNING (S. N.)—Monograph of the species of *Aphilanthops* inhabiting Boreal America, 1898, 8 pp. . . . . **.10**

FOX (W. J.)—The species of *Psen* inhabiting America north of America, 1898. 18 pp. . . . . **.20**

Sent on receipt of price.

Price Lists Nos. 1, 2, 3 and 4 may be had on application to

E. T. CRESSON, Treasurer,
P. O. Box 248, PHILADELPHIA, PA.

A MANUAL FOR THE STUDY OF INSECTS. By John Henry Comstock, Professor of Entomology in Cornell University, and Leland Stanford, Jr., University, and Anna Botsford Comstock, member of the Society of American Wood Engravers. The book consists of 711 pages, and is illustrated by 797 figs. in the text and six full-page plates, one of which is colored. For sale by ENTOMOLOGICAL NEWS. Price, **$4.09.**

HONDURAS LEPIDOPTERA FOR SALE.

Address: **ERICH WITTKUGEL,**
San Pedro Sula, Honduras, Cent. Am.

LEPIDOPTERA FOR SALE.

North American Lepidoptera for sale; also Central American and European Lepidoptera at lowest rates. Lepidoptera wanted in exchange or purchase in lots from all countries. Address:

HENRY ENGEL, 153 26th St., S. S.,
PITTSBURG, PA., U. S. A.

A TEXT-BOOK OF ENTOMOLOGY, including the anatomy, physiology, embryology and metamorphoses of insects for use in agricultural and technical schools and colleges, as well as by the working entomologist, by Alpheus S. Packard, Professor of Zoology and Geology, Brown University, author of "Guide to Study of Insects," "Entomology for Beginners," etc., with over 400 illustrations. 8vo. For sale by ENTOMOLOGICAL NEWS. Price, **$4.50.**

P. C. STOCKHAUSEN, ENTOMOLOGICAL PRINTER 55 N. 7TH ST., PHILA. PA.

When Writing Please Mention "Entomological News."

JOHN AKHURST,

TAXIDERMIST AND DEALER IN ENTOMOLOGICAL SUPPLIES.

Improved Entomological Forceps.

Fine Carlsbader Insect Pins a specialty. Price-list sent on application.
78 Ashland Place,
Brooklyn, N. Y.

LEPIDOPTERA FOR SALE AND EXCHANGE.

Lowest prices on Indian, S. American and Australian Lepidoptera. Papilios: *daksha*, *tamalina*, *buddha*, etc. Morphos: *cipris* and *amathonte*. Papilios *buddha* and *polymnestor* $25 per 100. Lot 100 mixed $5. Send for list.

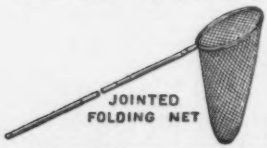
H. K. BURRISON, West Newton, Mass.

Fine Mexican Material For Sale.

Insects of all families from Temperate and Tropical Mexico. Material carefully put up; specimens fresh and perfect. Rates reasonable. Choice lots to dealers and special attention to specialists' desiderata. Home address:

OTIS W. BARRETT, Clarendon, Vt., U. S. A.

A. SMITH & SONS, 269 PEARL STREET, NEW YORK.



MANUFACTURERS AND IMPORTERS OF

GOODS FOR ENTOMOLOGISTS,

Klaeger and Carlsbad Insect Pins, Setting Boards, Folding Nets, Locality and Special Labels, Forceps, Sheet Cork, Etc. Other articles are being added, Send for List.

FOR SALE CHEAP.

First two volumes of Edwards' Butterflies of North America. Apply to ENTOMOLOGICAL NEWS.

Coleoptera of North America For Sale.

New list about 4000 species, ready about Dec. 1st, including especially desirable species from South and West. Schools and colleges supplied. Foreign trade solicited.

JOHN D. SHERMAN, Jr.,
Box 1534, New York City.

PACIFIC COAST COLEOPTERA.

Perfect specimens. Correct names. Very reasonable prices. Satisfaction guaranteed. Collections at fifty per cent discount.

L. E. RICKSECKER,
Santa Rosa, Sonoma County, California.

THE NEW QUEEN ACHROMATIC TRIPLETS

ARE THE BEST POCKET MAGNIFIERS MADE.

INSECT PINS. SHEET CORK.

QUEEN & CO.,

Optical and Scientific Instrument Works,
1010 Chestnut Street, Philadelphia.